

Date: Thursday, 4/12/2007 8:45:42 AM  
 User: Kim Johnston

## Process Sheet

Customer	: CU-DAR001 Dart Helicopters Services		Drawing Name	: BRACKET ASSEMBLY		
Job Number	: 31728					
Estimate Number	: 10279					
P.O. Number	: N/A		Part Number	: D3121143		
This Issue	: 4/12/2007 S.O. No. : N/A		Drawing Number	: D3121 REV D		
Prsht Rev.	: NC		Project Number	: N/A		
First Issue	: N/A		Drawing Revision	: D		
Previous Run	: 31070		Material	: N/A		
Written By			Due Date	: 5/5/2007 Qty: 8 Um: Each		
Checked & Approved By						
Comment	: Est Rev: Pick:A 04.02.18 New issue KJ/DS					

## Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :		
1.0	M174B1000X02000	17-4 SS Bar		
	Comment: Qty.: 0.3864 f(s)/Unit Total : 3.0912 f(s)			
	Material: 17-4 SS Bar per AMS 5604/5643			
	(M17-4-B1.000x02.000)			
	Identify for D3121-113			
	Batch: M103089		7NL 07/04/29	8
2.0	BAND SAW	BAND SAW		
	Comment: BAND SAW			
	Cut blanks: (1.000" x 2.000") 4.425" long		7NL 07/04/29	8
3.0	HAAS1	HAAS CNC VERTICAL MACHINING #1		
	Comment: HAAS CNC VERTICAL MACHINING #1			
	1-Machine D3121-113 as per Folio FA330 and Dwg D3121			
	Identify as D3121-113			
	2-Deburr			
	3-Scribe batch number		7NL 07/04/30	8
4.0	QC2	INSPECT PARTS AS THEY COME OFF MACHINE		
	Comment: INSPECT PARTS AS THEY COME OFF MACHINE		7NL 07/04/30	8

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes  No  DQA:  Date: 07/05/03  
 QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action      Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Thursday, 4/12/2007 8:45:42 AM  
User: Kim Johnston

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: BRACKET ASSEMBLY

Job Number: 31728

Part Number: D3121143

Job Number:



Seq. #: Machine Or Operation:

Description :

5.0 QC8 SECOND CHECK



Comment: SECOND CHECK

*SG 07/04/30*

8

6.0 D312121 Bolt



Comment: Qty.: 2.0000 Each(s)/Unit Total : 16.0000 Each(s)

Pick:

Qty Part Number Description Batch

2 D3121-21 Bolt *B31758*

*and 07/04/30*

8

7.0 D3121241 Bearing Assembly



Comment: Qty.: 2.0000 Each(s)/Unit Total : 16.0000 Each(s)

Pick:

Qty Part Number Description Batch

2 D3121-241 Bearing Ass *B31700*

*and 07/04/30*

8

8.0 SMALL FAB 1 SMALL & MEDIUM FAB RESOURCE 1



Comment: SMALL & MEDIUM FAB RESOURCE 1

Assemble D3121-143 as per Dwg D3121.

*and 07/04/30*

8

9.0 QC5 INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

*in 07/05/02*

(X8)

10.0 PACKAGING 1 PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location: *JT233*

*P 7/5/02*

(8)

(8)

11.0 QC21 FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

*1007/05/03*

Job Completion



*U Spec B3*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_  
 QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD	Work Order:	31728
Description: Bracket	Part Number:	D3121-113
Inspection Dwg: D3121 Rev: D		Page 1 of 2

### FIRST ARTICLE INSPECTION CHECKLIST

First Article     Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
0.080	+/-0.010	0.079	/			
0.300	+/-0.010	0.300	/			
R0.375	+/-0.010	R0.375	/			
1.54	+/-0.030	1.543	/			
0.350	+/-0.010	0.351	/			
R0.250	+/-0.010	R0.250	/			
1.800	+/-0.030	1.793	/			
Ø0.392	+0.002/-0.000	Ø0.393	/			
Ø0.201	+0.005/-0.000	Ø0.201	/			
0.100	+/-0.010	0.096	/			
2.540	+/-0.010	2.541	/			
1.590	+/-0.010	1.590	/			
0.160	+/-0.010	0.159	/			
0.400	+/-0.010	0.390	/			
1.220	+/-0.010	1.210	/			
1.600	+/-0.010	1.594	/			
3.80	+/-0.030	3.795	/			
1.800	+/-0.010	1.793	/			
R0.500	+/-0.010	R0.500	/			
0.130	+/-0.010	0.130	/			
3.41	+/-0.030	3.410	/			
3.65	+/-0.030	3.635	/			
2.24	+/-0.030	2.225	/			
45°	+/-0.1°	45°	/			
R0.250	+/-0.010	R0.250	/			
3.97	+/-0.030	3.969	/			
R0.38	+/-0.030	R0.375	/			
Ø0.392	+0.002/-0.000	Ø0.393	/			
Ø0.201	+0.005/-0.000	Ø0.201	/			
0.100	+/-0.010	0.098	/			
0.268	+/-0.010	0.265	/			
R0.260	+/-0.010	R0.260	/			
0.080	+/-0.010	0.082	/			
0.300	+/-0.010	0.301	/			

DART AEROSPACE LTD	Work Order:	31728
Description: Bracket	Part Number:	D3121-113
Inspection Dwg: D3121	Rev: D	Page 2 of 2

# FIRST ARTICLE INSPECTION CHECKLIST

## X First Article      Prototype

Measured by:	Amber
Date:	07/04/29

Audited by:	Ms
Date:	07/04/30

<b>Prototype Approval:</b>	N/A
<b>Date:</b>	N/A

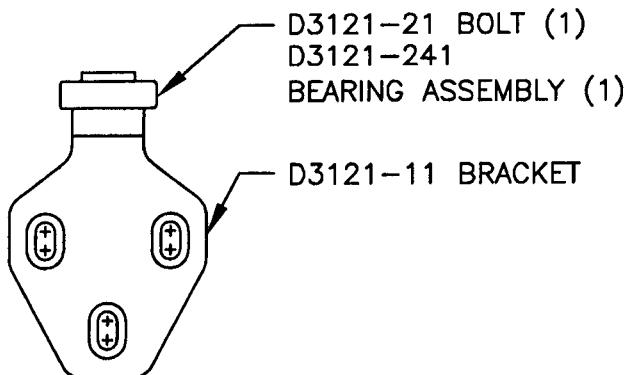
<b>Rev</b>	<b>Date</b>	<b>Change</b>	<b>Revised by</b>	<b>Approved</b>
A	03.12.08	New Issue P/O D3121-143	KJ/RF	
B	04.05.05	Dimensions changed/re-arranged per Dwg revision	KJ/JLM	
C	06.06.14	Dwg Rev. updated	KJ/JLM	

**DART**

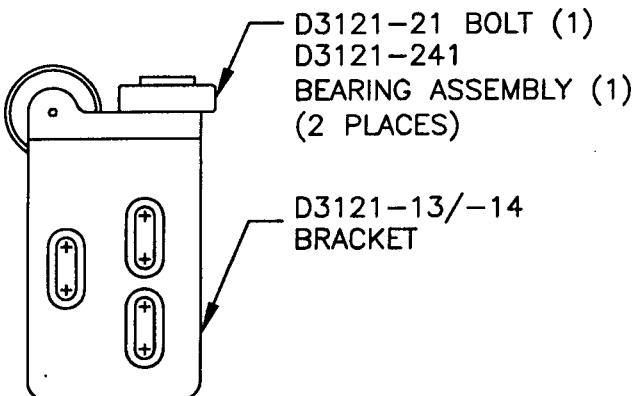
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CHECKED	APPROVED	DRAWING NO.	REV. D
		D3121	SHEET 1 OF 10
DATE		TITLE	SCALE
06.05.17		BRACKET ASSEMBLY	1:2
A	02.04.15	NEW ISSUE	
B	03.01.16	ADD RIDGES; ADD MAT'L PROP; FIX P/N ADD -141/-143/-144/-145/-146	
C	04.02.17	ADD CLEARANCE; USE -241 BEARING	
D	06.05.17	D3121-25 CAP WAS 1.024, NOW 1.000	

RELEASED

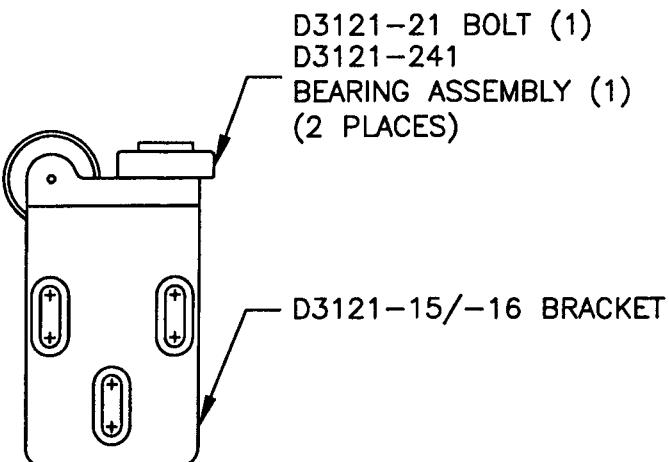
06.06.02

**D3121-041 BRACKET ASSEMBLY**

(REPLACES PREMIER P/N B30-23000-33)

**D3121-043 (SHOWN) / D3121-044 (OPPOSITE)  
BRACKET ASSEMBLY**

(REPLACES PREMIER P/N B30-23000-37/-38)

**D3121-045 (SHOWN) / D3121-046 (OPPOSITE)  
BRACKET ASSEMBLY**

(REPLACES PREMIER P/N B30-23000-35/-36)

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DATE		SHEET 2 OF 10 SCALE 1:2

D3121-21 BOLT (1)  
D3121-241  
BEARING ASSEMBLY (1)

D3121-111 BRACKET

**D3121-141 BRACKET ASSEMBLY**  
(REPLACES PREMIER P/N B30-23001-01)

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06.06.02

D3121-21 BOLT (1)  
D3121-241 BEARING ASSEMBLY (1)  
(2 PLACES)

D3121-113/-114 BRACKET

**D3121-143 (SHOWN) / D3121-144 (OPPOSITE)**  
**BRACKET ASSEMBLY**  
(REPLACES PREMIER P/N B30-23000-03/-04)

D3121-21 BOLT (1)  
D3121-241 BEARING ASSEMBLY (1)  
(2 PLACES)

D3121-115/-116  
BRACKET

**D3121-145 (SHOWN) / D3121-146 (OPPOSITE)**  
**BRACKET ASSEMBLY**  
(REPLACES PREMIER P/N B30-23000-05/-06)

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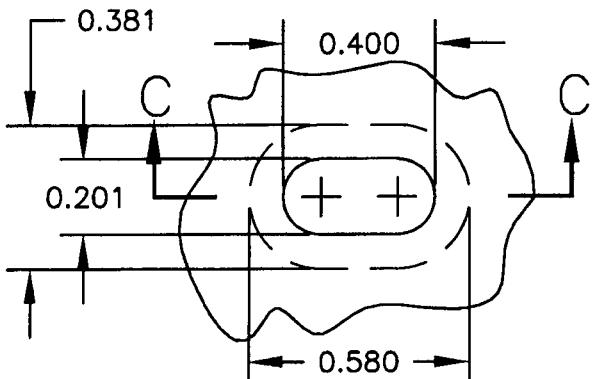
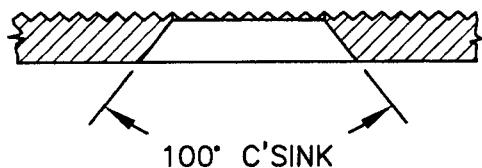
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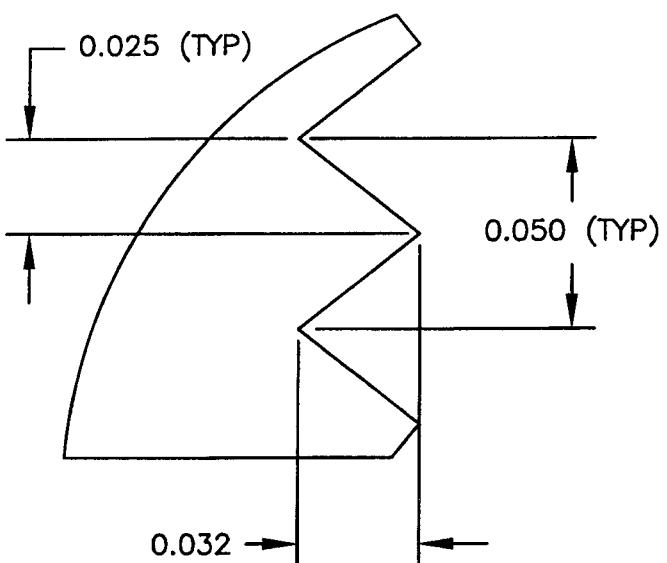
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DATE		TITLE BRACKET ASSEMBLY

REV. D  
SHEET 3 OF 10  
SCALE  
1:1

**DETAIL A:**  
**SLOT DETAIL**  
SCALE 2:1  
VIEW ROTATED

**SECTION  
C-C**

**DETAIL B:**  
**RIDGE DETAIL**  
PARTIAL SECTION  
SCALE 1:20



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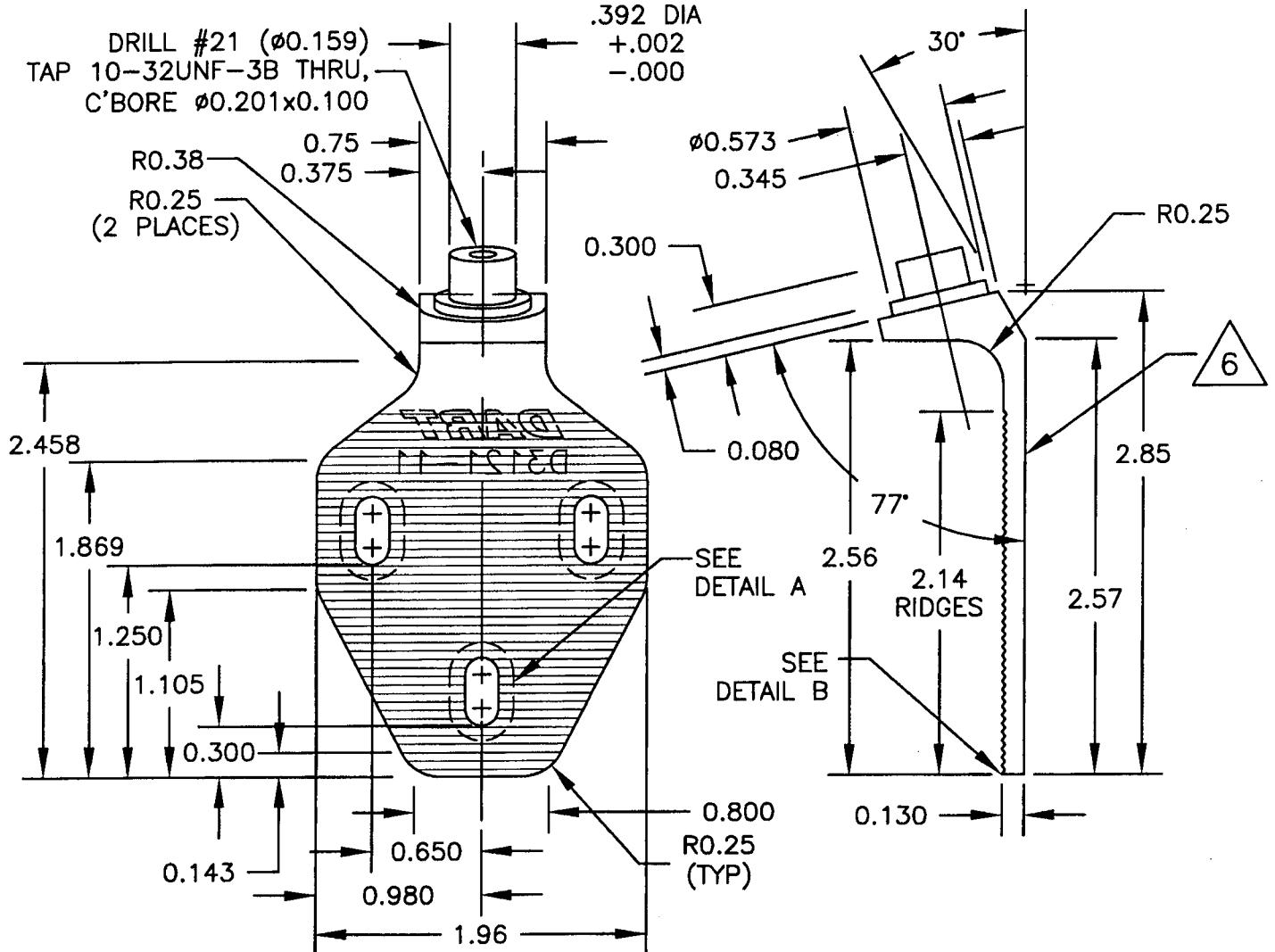
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REV. D

SHEET 4 OF 10

SCALE

1:1

**D3121-11 BRACKET**

- 1) MATERIAL: 17-4 SS PER AMS 5604/5643 (REF DART SPEC. M17-4-B)  
MIN ULTIMATE TENSILE = 150 ksi  
MIN YIELD TENSILE = 100 ksi
- 2) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 3) ALL DIMENSIONS ARE IN INCHES
- 4) BREAK ALL SHARP EDGES 0.005 TO 0.015
- 5) ENGRAVE DART P/N & LOGO AS SHOWN
- 6) HOLE IN SPIGOT TO BE CONCENTRIC WITHIN 0.005

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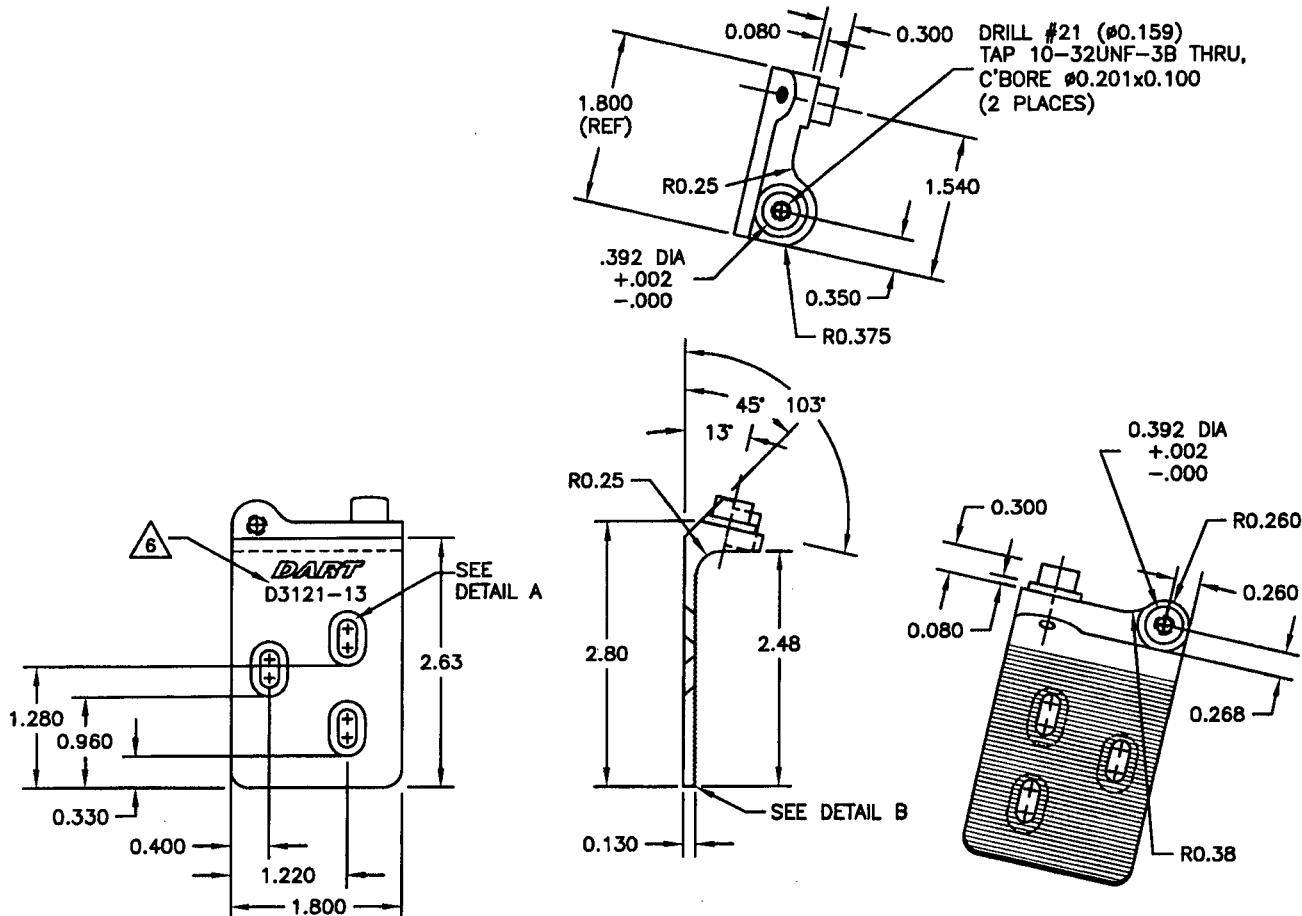
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DATE	06.05.17	REV. D SHEET 5 OF 10 SCALE 1:2 TITLE BRACKET ASSEMBLY



**D3121-13 BRACKET (SHOWN)**  
**D3121-14 BRACKET (OPPOSITE)**

- 1) MATERIAL: 17-4 SS PER AMS 5604/5643 (REF DART SPEC. M17-4-B)  
MIN ULTIMATE TENSILE STRENGTH = 150 ksi  
MIN YIELD TENSILE STRENGTH = 100 ksi
- 2) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 3) ALL DIMENSIONS ARE IN INCHES
- 4) BREAK ALL SHARP EDGES 0.005 TO 0.015
- 5) ENGRAVE DART P/N & LOGO AS SHOWN
- 6) HOLE IN SPIGOT TO BE CONCENTRIC WITHIN 0.005

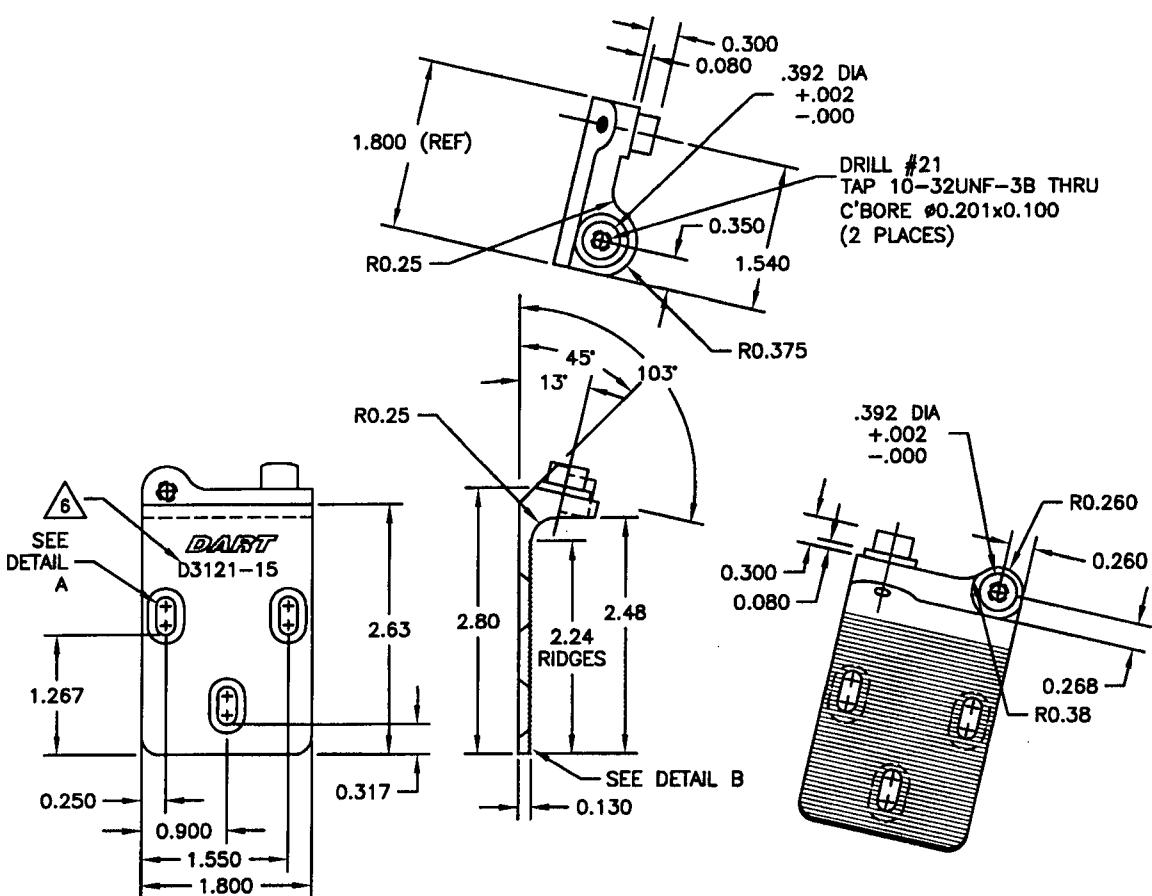
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06.06.02 MM

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DATE		REV. D SHEET 6 OF 10 TITLE SCALE BRACKET ASSEMBLY 1:2

**D3121-15 BRACKET (SHOWN)****D3121-16 BRACKET (OPPOSITE)**

1) MATERIAL: 17-4 SS PER AMS 5604/5643 (REF DART SPEC. M17-4-B)

MIN ULTIMATE TENSILE = 150 ksi

MIN YIELD TENSILE = 100 ksi

2) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED

3) ALL DIMENSIONS ARE IN INCHES

4) BREAK ALL SHARP EDGES 0.005 TO 0.015

5) ENGRAVE DART P/N AND LOGO AS SHOWN

6) HOLE IN SPIGOT TO BE CONCENTRIC WITHIN 0.005

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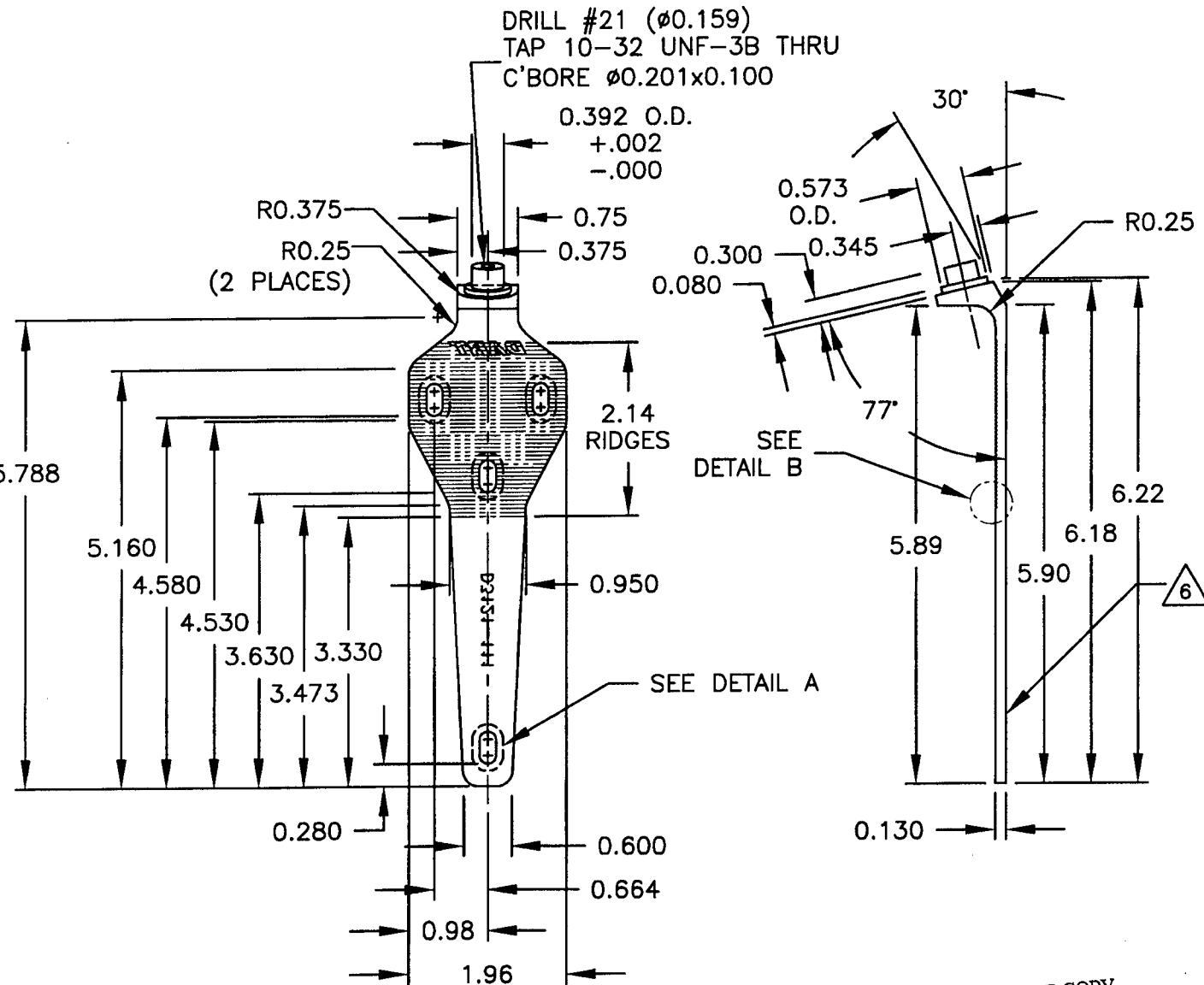
WORK ORDER  
NO. 31728

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DATE	06.05.17	TITLE	SHEET 7 OF 10 SCALE 1:2

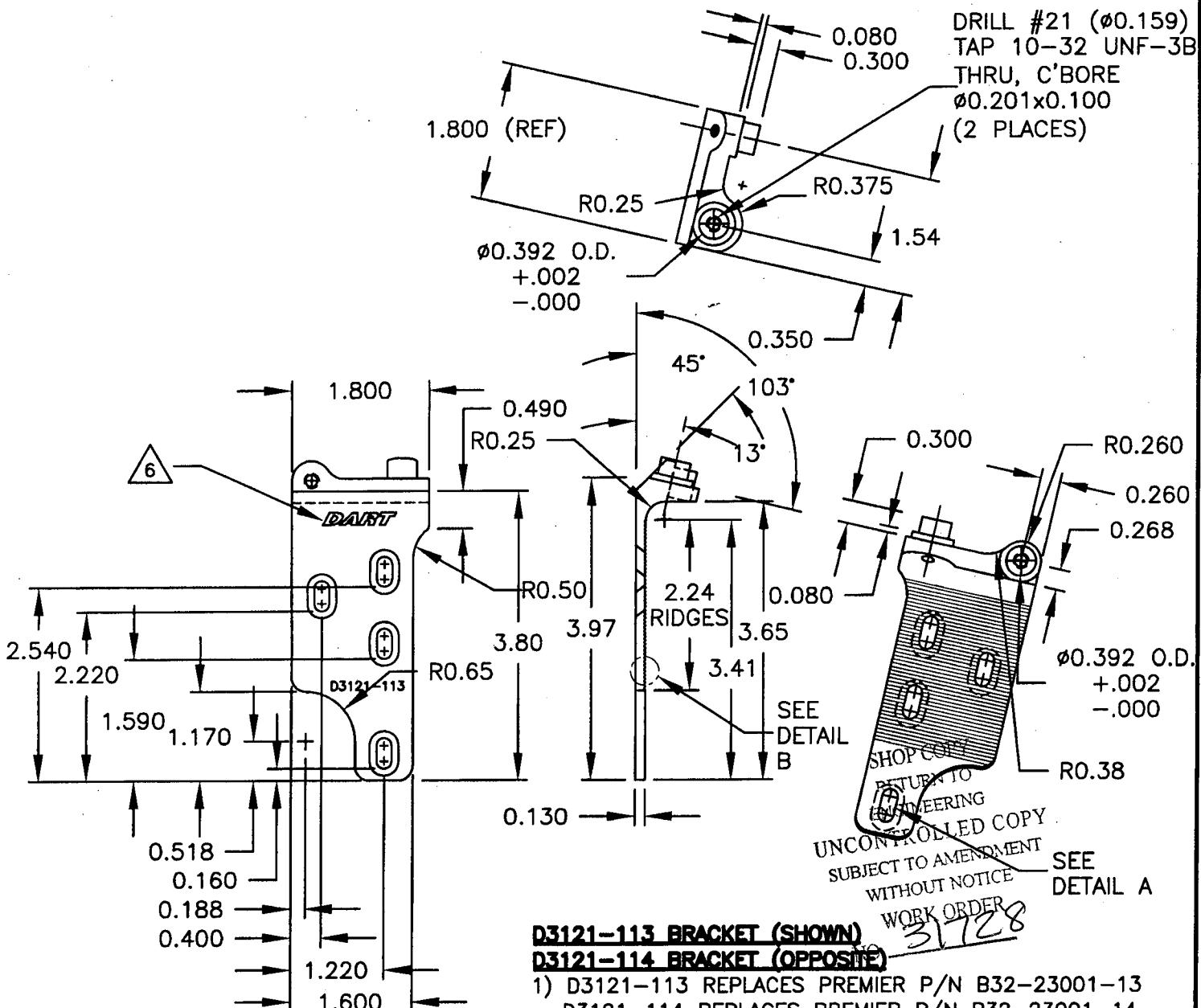
**D3121-111 BRACKET**

- 1) REPLACES PREMIER P/N B32-23001-11
- 2) MATERIAL: 17-4 SS PER AMS 5604/5643 (REF DART SPEC. M17-4-B)  
MIN ULTIMATE TENSILE = 150 ksi  
MIN YIELD TENSILE = 100 ksi
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) ALL DIMENSIONS ARE IN INCHES
- 5) BREAK ALL SHARP EDGES 0.005 TO 0.015
- 6) ENGRAVE DART P/N & LOGO IN AREAS SHOWN
- 7) HOLE IN SPIGOT TO BE CONCENTRIC WITHIN 0.005

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WORK ORDER  
NO. 31728  
RELEASED  
06.06.02



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CHECKED 	APPROVED 	DRAWING NO. D3121	REV. D SHEET 8 OF 10
DATE 06.05.17		TITLE BRACKET ASSEMBLY	SCALE 1:2



**D3121-113 BRACKET (SHOWN)**  
**D3121-114 BRACKET (OPPOSITE)**

- 1) D3121-113 REPLACES PREMIER P/N B32-23001-13  
D3121-114 REPLACES PREMIER P/N B32-23001-14
- 2) MATERIAL: 17-4 SS PER AMS 5604/5643  
(REF DART SPEC. M17-4-B)  
MIN ULTIMATE TENSILE STRENGTH = 150 ksi  
MIN YIELD TENSILE STRENGTH = 100 ksi
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS  
OTHERWISE NOTED
- 4) ALL DIMENSIONS ARE IN INCHES
- 5) BREAK ALL SHARP EDGES 0.005 TO 0.015
- 6) ENGRAVE DART P/N & LOGO IN AREAS SHOWN
- 7) HOLE IN SPIGOT TO BE CONCENTRIC WITHIN 0.005

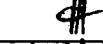
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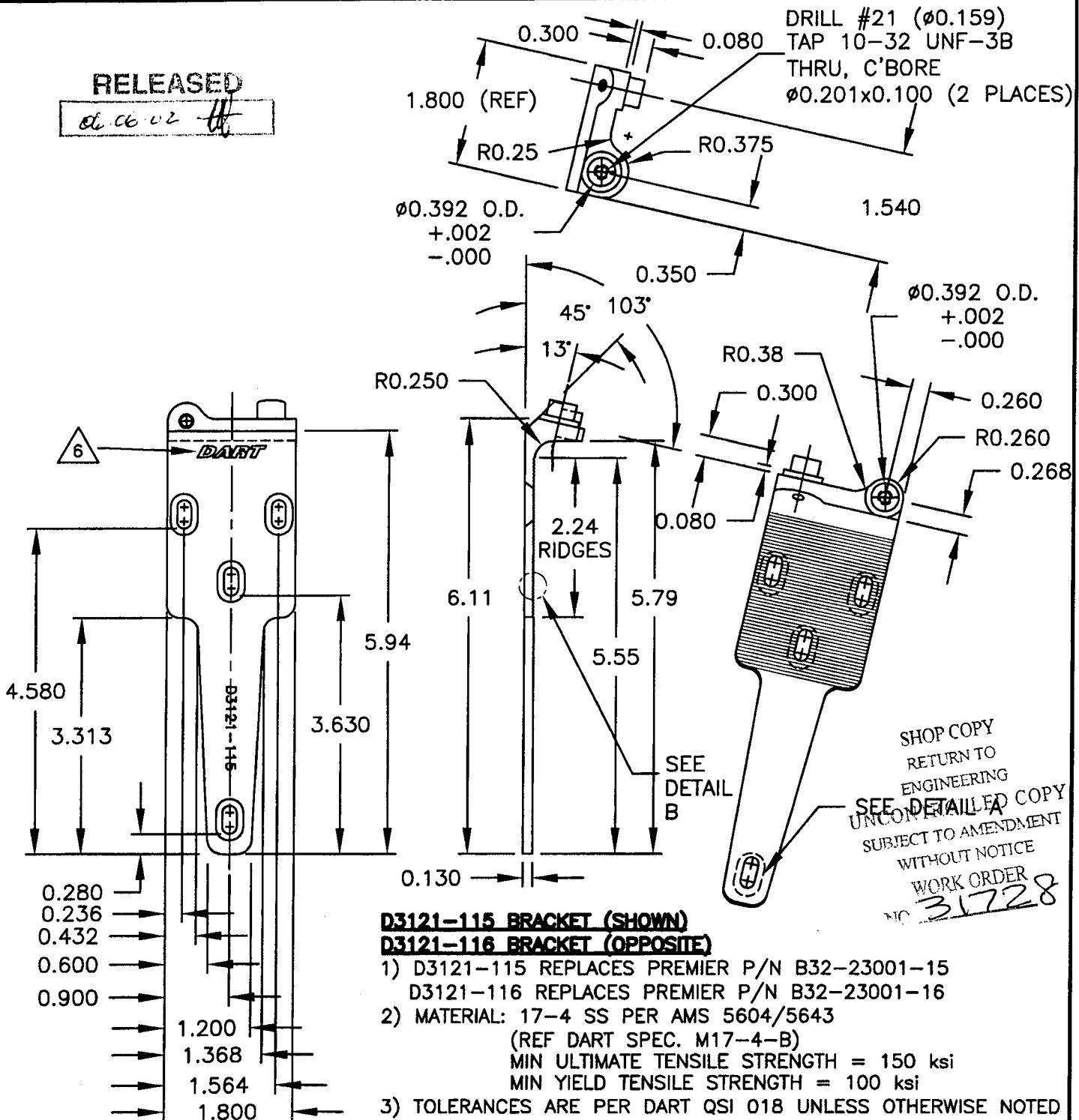
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CHECKED 	APPROVED 	DRAWING NO. D3121	REV. C SHEET 9 OF 10
DATE 04.02.18	TITLE BRACKET ASSEMBLY	SCALE 1:2	

RELEASED

06-02-01



**D3121-115 BRACKET (SHOWN)**  
**D3121-116 BRACKET (OPPOSITE)**

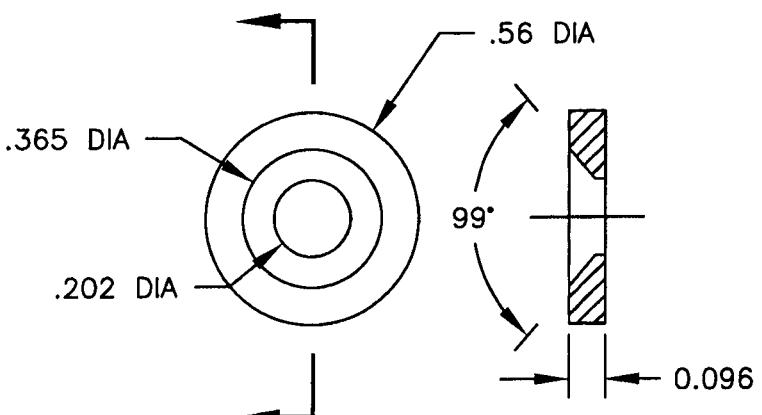
- 1) D3121-115 REPLACES PREMIER P/N B32-23001-15  
D3121-116 REPLACES PREMIER P/N B32-23001-16
- 2) MATERIAL: 17-4 SS PER AMS 5604/5643  
(REF DART SPEC. M17-4-B)  
MIN ULTIMATE TENSILE STRENGTH = 150 ksi  
MIN YIELD TENSILE STRENGTH = 100 ksi
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) ALL DIMENSIONS ARE IN INCHES
- 5) BREAK ALL SHARP EDGES 0.005 TO 0.015
- 6) ENGRAVE DART P/N & LOGO IN AREAS SHOWN
- 7) HOLE IN SPIGOT TO BE CONCENTRIC WITHIN 0.005

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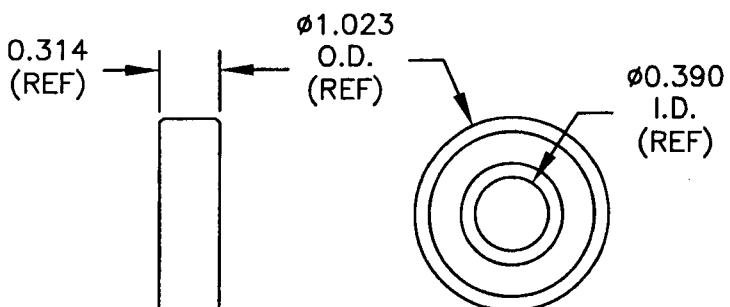
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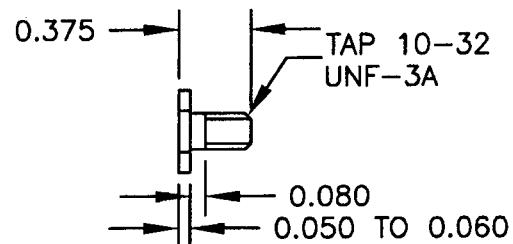
DESIGN	DRAWN BY	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED	APPROVED	DRAWING NO.	REV. D
		D3121	SHEET 10 OF 10
DATE	TITLE	SCALE	
06.05.17	BRACKET ASSEMBLY	1:1	

**D3121-17 WASHER (SCALE 2:1)**

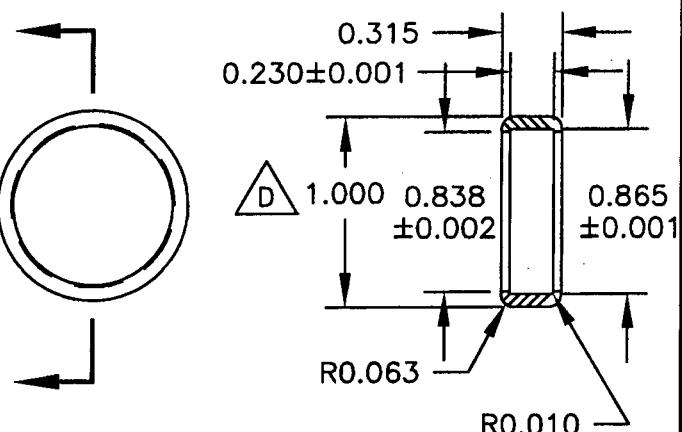
- 1) REPLACES PREMIER P/N B32-23001-17
- 2) MATERIAL: AISI 303 SS ROUND BAR, ANNEALED (REF DART SPEC. M303R)
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) ALL DIMENSIONS ARE IN INCHES
- 5) BREAK ALL SHARP EDGES 0.005 TO 0.015

**D3121-19 BEARING (SCALE 1:1)**

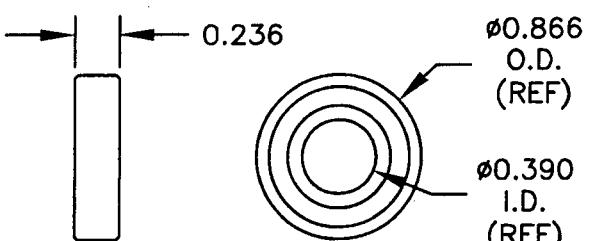
- 1) POSSIBLE SUPPLIER: KING BEARING P/N 6000-2ZJ/EM  
FAFNIR P/N 9100KDD
- 2) ALL DIMENSIONS ARE IN INCHES

**D3121-21 BOLT (SCALE 1:1)**

- 1) MATERIAL: AISI 303 SS HEX, ANNEALED (REF DART SPEC. M303H0.500)
- 2) FINISH: NONE
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) ALL DIMENSIONS ARE IN INCHES
- 5) BREAK ALL SHARP EDGES 0.005 TO 0.015

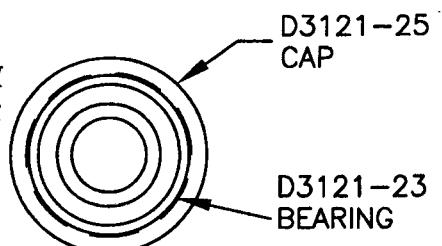
**D3121-25 CAP (SCALE 1:1)**

- 1) MATERIAL: DELRIN ROD, Ø1.25 (REF DART SPEC. M-DELRIN-R1.250)
- 2) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 3) ALL DIMENSIONS ARE IN INCHES

**D3121-23 BEARING (SCALE 1:1)**

- 1) POSSIBLE SUPPLIER: SKF P/N 61900-2Z  
OR KML P/N 6900-ZZ
- 2) ALL DIMENSIONS ARE IN INCHES

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